RP

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RP:0028

Colonel Alfred J. Thiede
District Engineer (PODCO-O)
U.S. Army Corps of Engineers
Building 230
Fort Shafter, Hawaii 96850

Dear Colonel Thiede:

PODCO-O 1739
Proposed Swimming Lagoon Project
Mauna Lani Bay Hotel
Nanuku Lagoon, Kawaihae, Hawaii

This project and its enclosed description raises a few questions concerning the environmental impacts it may create. More information was needed to determine whether the concerns raised in the following discussion were potentially destructive to Hawaii's cultural resources and fragile coastal ecosystem. The original environmental assessment was reviewed along with the above cited document to increase background information needed to prepare a proper review.

This Environmental Center review of the proposed project has been prepared with the assistance of Alison Kay, Zoology; Bertell Davis, Archaeology; Jacquelin Miller and Mark Ingoglia, Environmental Center. The following comments are offered for your consideration.

Description of the proposed activity

The temporary causeway measuring approximately 800 feet long as shown in Figure 3 is referred to as "temporary fill to facilitate offshore dredging" in paragraph 4. This description underplays the impact of building the causeway and the effect it may have on turbidity and sedimentation, hence the local marine biota.

Impacts of proposed activity

Neither the PODCO Public Notice nor the assessment filed with DPED relative to CZM consistency state explicitly whether it is aa or pahoehoe lava at the Nanuku inlet that is to be dredged to create a swimming lagoon. The surface relief as shown in Figure 3 in the public notice and as described in the assessment suggests that the flow is pahoehoe. If this is the case, it seems doubtful that the dredging can be accomplished without some blasting, although blasting is not mentioned in either the public notice or the assessment.

If blasting may be necessary, two kinds of effects should be recognized: 1) possible accoustic effects on the fauna in the inlet to be dredged; in the adjacent Waipuhi Fishpond to the south, and in the open waters to the west; 2) the increased levels of turbidity that will result from the blasting, and the effects of these increased levels on the open-water biota.

The assessment filed with DPED relative to CZM consistency indicates that there are significant variations in salinity in the semi-enclosed waters due to substantial groundwater discharge. The assessment does not distinguish the salinity variations in Nanuku Inlet from those in Waipuhi Fishpond, and in neither the assessment nor the public notice is there an estimate of the rate of groundwater discharge to the Inlet. The deepening of the inlet will cause no significant overall increase in the overall discharge to the sea from the Herzberg lens of groundwater, but it is certain to increase the local concentration of the discharge to and through the inlet and decrease the rates of discharge elsewhere, including that to and through Waipuhi Fishpond. If the permeability of the lava were uniform, the increase in discharge to and through the inlet would probably be a small fraction of the natural discharge, and it would be still smaller if the hydraulic permeability from the watertable to the depth of the present lagoon, about 3½ feet below msl, were large relative to the premeability below that depth. If, however, the excavation to a depth of about 8 feet below msl were to encounter aa clinker or a section of pahoehoe with more or larger than usual openings, the increase in discharge into and through the inlet might be as large or even larger than the natural discharge.

The rate of groundwater discharge will affect the minimum and mean salinity in the inlet, and also the minimum temperature of water.

As mentioned in the Environmental Assessment, if the water flow capability of the two flushing channels do not function properly, anoxic conditions forming within the lagoon are a possibility. Another possibility that was not mentioned in the environmental assessment is the influx of undesirable brackish water species into the swimming lagoon after the concentrations of fresh water extrusion are focused in the swimming lagoon. This has occurred in Honokohau Boat Harbor after dredging. An extremely large influx of sea urchins, oysters and vermetids colonized the harbor as a result of the dredging. The possiblity of increased turbidity and the influx of undesirable species into the swimming lagoon may warrent further consideration. Will the proposed project "provide a better and safer swimming lagoon in front of the Mauna Lani Bay Hotel?"

Impact on Cultural Resources

It is important that both the National Register of Historic Places as well as the National Park Service were consulted on the presence of registered properties or properties determined eligible for inclusion therein in the proposed permit area. There are no registered or eligible sites, yet the possiblity of archaeological resources still exists. There is a need for further research into the proposed project areas potential for cultural resources. This is especially important considering the proximity of the fish pond and general coastal geography that is so often associated with vast archaeological resources. Data is needed to make a determination as to what archaeological research has been completed in this lagoon and dredge fill area. Then a plan is needed to discuss if construction will be monitored

for any archaeological finds during the dredging and filling or if testing will occur before the proposed project is begun. Pre-construction archaeological testing can be advantageous because it reduces the possiblity of costly delays during construction.

Thank you for the opportunity to review the above cited PODCO.

Yours truly,

Jacquelin M. Miller for D.C.C.

Doak C. Cox
Director

cc: Alison Kay
Bertell Davis
Jacquelin Miller
Mark Ingoglia